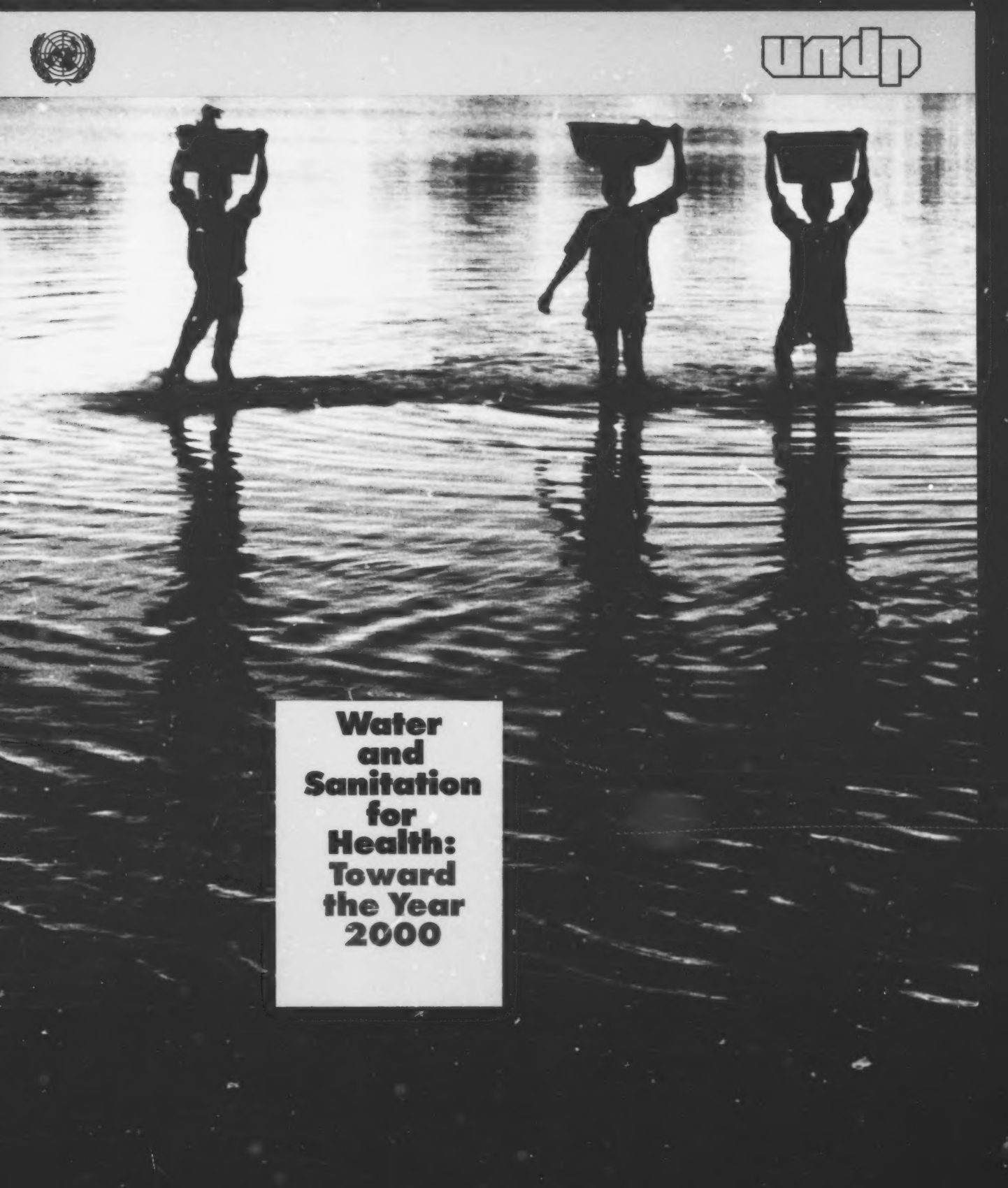


Water and Sanitation for Health: Toward the Year 2000

Meeting A Basic Human Need

Most of the three and one-half billion people living in the developing world face a burdensome problem. The young face an ever-present danger.

The problem is unsafe drinking water and inadequate sanitation. The consequences are sickness, disease and, all too often, death.

■ 80 per cent of all sickness and disease in the developing world can be attributed to unsafe water and inadequate sanitation.

■ Four million children below age five die every year in the developing world from diarrhoeal diseases caused by polluted water and an unsanitary environment.

■ Tens of millions of people in the developing countries—especially the women and children—spend vast amounts of their time and energy transporting water over long distances.

From the foothills of the Himalayas to the savannah lands of East Africa, however, a global effort is underway to bring safe water and adequate sanitation to everyone in need. Governments, international aid agencies, community groups and the private sector are co-operating and contributing to create a safer, healthier environment in the developing world.

READEX FICHE

The Water and Sanitation Decade
Progress and Challenge

Since the United Nations General Assembly launched the "International Drinking Water Supply and Sanitation Decade" (IDWSSD) in 1980, substantial progress has been made in providing new water supply and sanitation services to people in both rural and urban areas of the developing world:

■ Every day since the launch of the Decade, an average of 200,000 people gained access to safe water supplies, and 100,000 gained access to proper sanitation facilities.

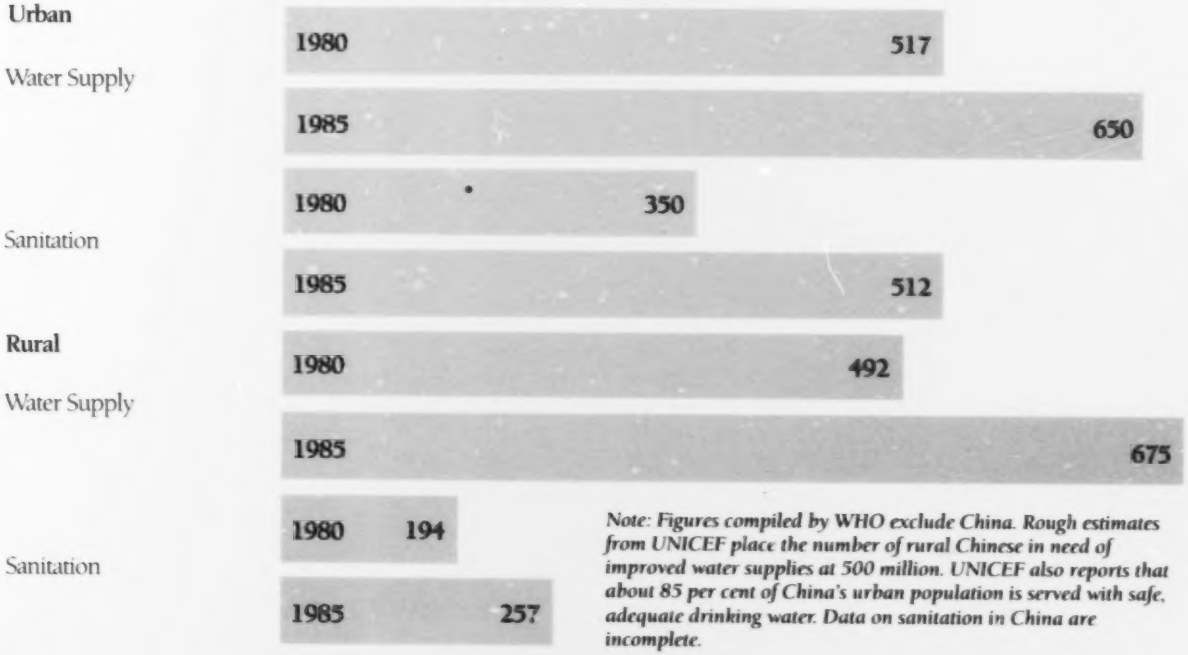
■ New or improved water supplies have been provided to over 500 million people throughout the developing world. Better sanitation has been provided to 250 million. The pace of construction of new water supply facilities was up three-fold during the first five years of the Decade.

The chart below illustrates the expanded service coverage achieved during the first half of the IDWSSD in the developing world.

Global Coverage *(in millions)*
All developing countries except China

1980 Population: 2,189
1985 Population: 2,474

(Source: IDWSSD Mid-Decade Progress Review, WHO, A39/11)



Note: Figures compiled by WHO exclude China. Rough estimates from UNICEF place the number of rural Chinese in need of improved water supplies at 500 million. UNICEF also reports that about 85 per cent of China's urban population is served with safe, adequate drinking water. Data on sanitation in China are incomplete.

The Challenge of Expanding Services

While most developing countries have made steady progress toward specific targets set for the 1980s, the overall IDWSSD goal of "water and sanitation for all" will be reached by only a small number of developing countries by 1990.

Continuing population growth throughout most of the developing world has made achievement of Decade targets more difficult. Rapid urbanization has overwhelmed city water and sanitation services in many countries. Financial austerity in many developing countries has slowed the pace of sector investments. And foreign aid commitments to water and sanitation improvements have fallen short of expectations.

But the difficulties encountered during the first half of the Decade have to be balanced against the positive developments. One major achievement has been in bringing down the per capita cost of providing water and sanitation services. Back in 1981, it cost an average of nearly US$300 to provide one person with full services. By the late 1980s, thanks to improved low-cost technologies, the cost per person has been reduced to about US$180.

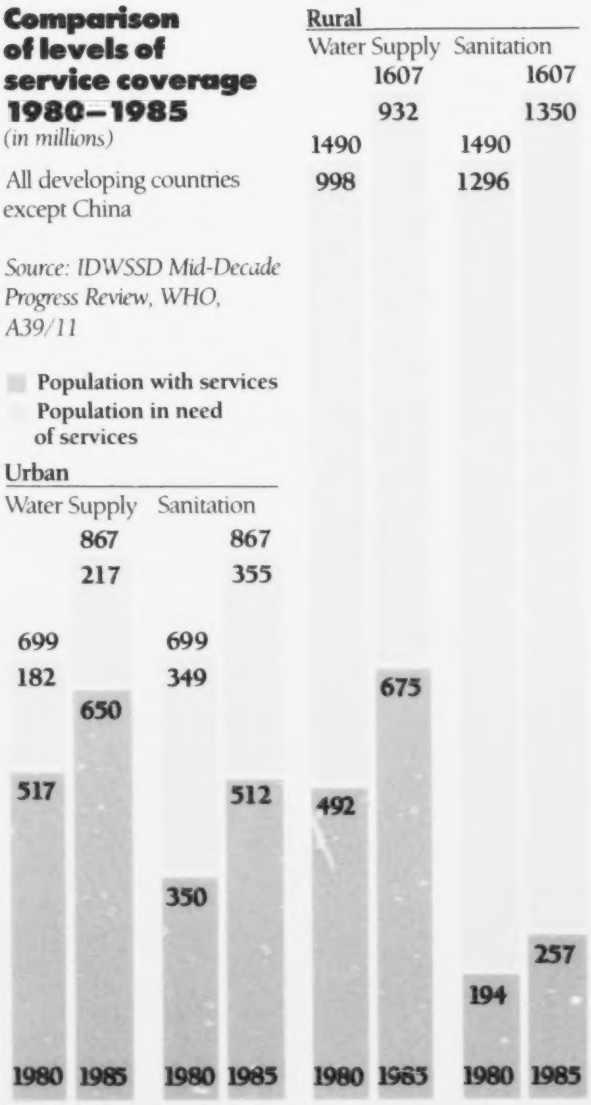
In some regions of the developing world, for example Southeast Asia, the per capita cost of providing safe drinking water in rural areas has fallen to as little as US$15. Improved water and sanitation together can cost as little as US$30 per person.

The chart below illustrates expanded water and sanitation services and remaining needs for the developing world.

Comparison of levels of service coverage 1980–1985
(in millions)

All developing countries except China

Source: IDWSSD Mid-Decade Progress Review, WHO, A39/11



The rotary driven Monolift pump has proven popular among users—especially children.

Decade Breakthroughs

Many important lessons are being learned during the course of the Decade about how and how not to design and implement sector programmes. Through experimentation, field testing and evaluation, innovative strategies have been refined that are currently being applied to new water and sanitation initiatives throughout the developing world. Such winning strategies include:

- Use of affordable, durable and simple technologies

- Maximizing community involvement in development programmes

- Integrating water supply, sanitation and health education efforts

- Encouraging women's participation

- Increasing training of personnel and participants at all levels

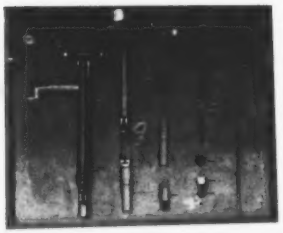
- Enhancing collaborative efforts among donor institutions

The TARA pump made in Bangladesh can serve about 75 people and costs about US$100.

Technology at the Village Level: A Report from Bangladesh

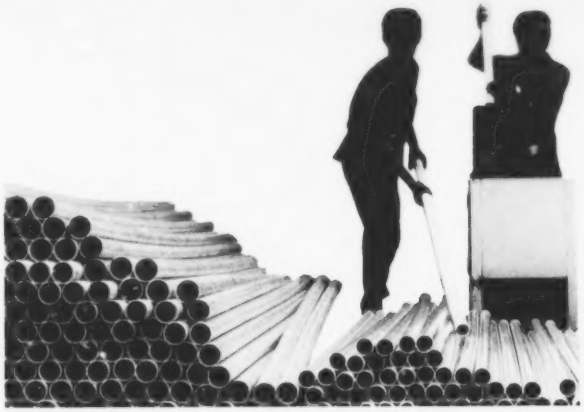
Behind a small factory on the outskirts of Dhaka, a muscular Bengali man raises and lowers the handle of a manual water pump beneath a thatched canopy. Day in and day out for more than a year, the crew of the Mirpur Agricultural Workshop and Training School (MAWTS) has kept the pump continuously operational. It has earned the equivalent of seven years of village use—with no signs of a breakdown.

This experimental, locally produced handpump, made mostly of plastic, is suitable for lifting water up from 15 metres below ground. Its local cost is around US$100—probably the cheapest for such equipment anywhere in the world. Since the introduction of the "TARA" (Bengali for Star) design in 1987, thousands of these new pumps have been installed to provide safe water to villages all over Bangladesh.



The simple, low-cost TARA handpump is being manufactured and installed on a large scale in Bangladesh.

Water is the dominant factor in the natural landscape of Bangladesh. It is both a blessing and a burden in a nation where the vast majority still eke out a meagre existence farming the monsoon flooded land. But tremendous health and social problems result from the abundance of generally unsafe water. Almost 125 of every 1,000 infants die within the first year of life. And among the leading causes of infant death are the diarrhoeal diseases and other waterborne killers such as malaria.



Pipes made from PVC plastic—for use with handpumps—are being made locally in Bangladesh.

In Mirzapur district, about an hour's drive from Dhaka, effective action is being taken. Almost five thousand villagers have become part of a human laboratory in which safe water from below ground and improved sanitation are available to everyone through the most advanced, yet low-cost technologies. Village women are now organized and trained to maintain and repair the newly-installed TARA handpumps.

The Kenyan-made Afridev pump is simple to repair and cheap to maintain.

From Togo to Kenya To Timor

The progress being made with "community-based" water, health and sanitation efforts in Bangladesh is being replicated in many other parts of the developing world.

In a remote rural village in the west African nation of Togo, a small boy can be seen wearing a tee-shirt that reads. "Our pump is our responsibility for our health."

Such popular education efforts are just one part of a large-scale "socio-health" programme being carried out in about 400 villages across the country. Carried out in conjunction with the installation of almost 700 rural wells, the programme focusses on increasing the positive impact of potable water on health.

Through the work of 120 newly-trained extension workers, villagers are being provided the technical and organizational skills necessary to manage and repair their wells, and also a methodology for resolving community health problems.

Kenyan Women Repairing an Afridev pump.

With assistance from UNDP and its associated United Nations Development Fund for Women (UNIFEM), bilateral and private aid organizations, the Kenya Water for Health Organization (KWAHO) is providing sector services to some 120,000 Kenyans through 25 community level "self-help" programmes. In the Kwale district bordering the Indian Ocean, KWAHO helps to organize village people into "water committees" which are responsible for maintaining and repairing handpumps.

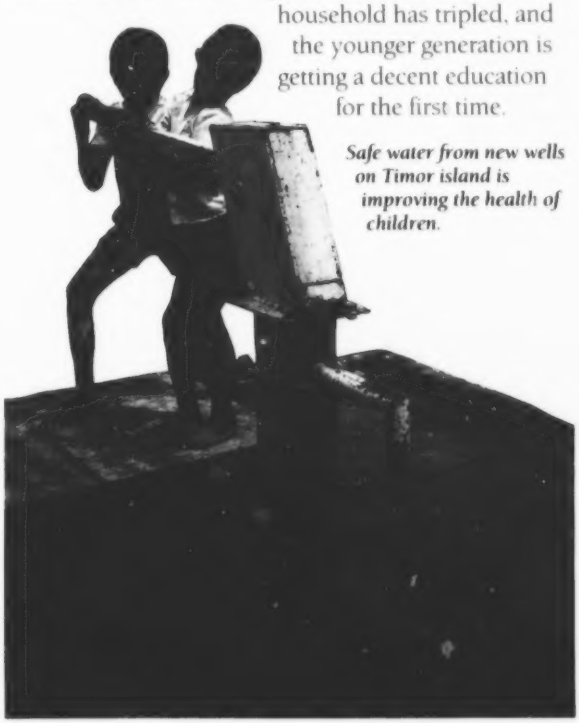
Like the TARA handpump in Bangladesh, the "Afridev" handpumps being installed in Kenya are locally manufactured and adapted to the local physical conditions. Both these handpump designs evolved out of years of intensive field testing and research carried out by a UNDP/World Bank team in more than 20 developing countries. The new Afridev design features easily replaceable plastic parts and simple assembly using only one standard tool. It can provide water to some 200 people and costs below US$500 locally.

The Mark II handpump design, pioneered in India, is used worldwide.

On the rugged Indonesian island of Timor, similar efforts are being undertaken to integrate water, sanitation and community health initiatives through the participatory approach.

The village of Bolok was once plagued by extreme poverty and disease. Today it serves as a training ground for motivating villagers from all over the island about the benefits of community-supported health programmes.

Over the past ten years since Bolok mobilized to improve water and health facilities, cholera and skin disease have been virtually eliminated, income per household has tripled, and the younger generation is getting a decent education for the first time.



Safe water from new wells on Timor island is improving the health of children.

"Before we dug the well and installed the handpump, we had to carry water from a cave two kilometres away. The water was salty and brought us disease. Our people were poor and our children never attended school. But our new water system changed all that."

—Bolok village chief, Lamburthus Lasy

Each family in Bolok contributed, financially and physically, to construction of new health facilities, from basic water supply to household latrines. People now are charged for water according to their use, while village technicians trained at the community level maintain and repair the four handpumps.

Today, Bolok serves as a model and a training centre for what Indonesian planners hope will take hold all over this far-flung archipelago.

Improved latrines made from local materials—reeds, wood, wattle and grass—can cost as little as US$7 and contribute to a healthier environment.

Lasting Impacts

The accumulated experiences during the International Drinking Water Supply and Sanitation Decade demonstrate that for a relatively small investment, the health and livelihood of people in developing countries can be markedly improved.

Introduction of safe drinking water and improved sanitation services has both considerable health and economic benefits:

Child Health—According to WHO, improvement of water quality and quantity can reduce diarrhoeal morbidity among children by nearly 40 per cent. Improved sanitary waste disposal reduces infant sickness by almost 25 per cent.

Water can be an entry point for improving community-level services.

Disease Control—Improved water and sanitation are the most effective measures in controlling cholera, typhoid, parasites and a variety of other endemic diseases. Improved water supplies are helping to combat the dreaded Guinea worm disease, which afflicts some 20 million people each year, mostly in Africa, India and Pakistan.

Community Catalyst—Implementation of improved water, sanitation and health services serve as effective entry points around which communities can be organized to improve other basic services and income-generating activities, including irrigation, animal husbandry and small-scale industries.

Before new deep wells were installed, wheat crops in China's Hebei Province were parched by drought.

Saving Women's Time—Accessible water supply eliminates the wearisome labour of women and children who typically walk two to three hours a day to gather water for their families. Nearby water supplies benefit the health of the women and their children, and is often the first step in women's advancement toward full participation in development.

Participants and their Roles

Meeting the goal of "water and sanitation for all" is an enormous task—a challenge that will carry most developing countries well into the 21st Century. The International Drinking Water Supply and Sanitation Decade (IDWSSD) is demonstrating that co-operation and support is essential from the village to the international level to successfully implement sector programmes.

At the Local Level

Communities in need of water and sanitation are playing a central role, especially in mobilizing local human and material resources. Local institutions, such as schools, health clinics, churches and women's organizations are playing a major role in water, health and sanitation improvements.

At the National Level

At least 90 governments in the developing world have established "National Action Plans" to pursue IDWSSD objectives. Many have set up National Action Committees composed of key ministries involved in sectoral planning and implementation. Despite economic austerity, many governments have increased their financial commitments to the sector. Efforts are underway to strengthen institutional mechanisms for design, management, extension, technical and evaluation services associated with Decade programmes.

At the International Level

The United Nations development system, together with numerous bilateral and private aid organizations, is working to devise and implement innovative strategies for the IDWSSD in all regions of the developing world. The activities of several U.N. system agencies are co-ordinated through the "Steering Committee for Co-operative Action" chaired by the United Nations Development Programme (UNDP). The members of this Committee are:

United Nations Development Programme (UNDP)

United Nations (Department of Technical Co-operation for Development UN/DTCD)

United Nations Children's Fund (UNICEF)

World Bank (IBRD/IDA)

World Health Organization (WHO)

International Labour Organisation (ILO)

Food and Agriculture Organization (FAO)

United Nations Educational, Scientific and Cultural Organization (UNESCO)

United Nations Environment Programme (UNEP)

United Nations Centre for Human Settlements ((UNCHS)

International Research and Training Institute for the Advancement of Women (INSTRAW)

UNDP Resident Representatives in developing countries serve as co-ordinators for inter-agency operations and assist National Action Committees.

Non-Governmental Organizations (NGOs) and the Private Sector from both developed and developing countries are actively involved in achieving Decade objectives. Private manufacturers—in co-operation with UN agencies—are developing cheap and reliable water supply and sanitation systems, such as handpumps and latrines. NGOs are working to ensure that community-based strategies are employed at the grass roots level in developing countries.

Contributions of the United Nations System

Several UN system agencies have specific programmes aimed at assisting developing countries in expanding water supply, sanitation and health services. For example:

UNDP

Chairs the Inter-Agency Steering Committee for Co-operative Action and co-ordinates the Decade activities at the national and international levels. It also provides grant support to applied research and demonstration projects throughout most of the developing world. During 1987, UNDP and its associated funds had some 253 active country and inter-country projects related to the International Drinking Water Supply and Sanitation Decade, amounting to US$267 million in support.

UN/DTCD

Is the principal UN agency involved in groundwater exploration and development. It currently operates in some 50 developing countries providing a wide range of hydro-geological services, as well as institution strengthening and water resources planning.

UNICEF

Works with governments in almost 100 developing countries to help build community-based sector services. It provides about US$60 million each year to projects in water supply, sanitation and hygiene education. In 1987, UNICEF helped to complete almost 70,000 water supply systems, including 60,000 handpumps benefitting 12 million persons in the developing world. It also helped complete over 200,000 sanitary excreta disposal systems benefitting 1.3 million people.

World Bank

Provides concessional financing to governments in support of expanded sector services throughout most of the developing world. Each year the Bank supplies over US$1 billion in loans to water supply and sewerage projects.

WHO

Is a central source of institutional and technical assistance to Decade programmes at both national and international levels. WHO facilitates co-operation and co-ordination of external aid programmes in support of Decade initiatives, and serves as the chief monitoring agency on progress at both national and international levels.

INSTRAW

Is responsible for promoting the effective involvement of women in the Decade through research, training and information. Together with UNICEF, INSTRAW acts as the Secretariat of the Inter-Agency Task Force on women and IDWSSD.

UNDP/World Bank Water and Sanitation Programme

Since 1978, UNDP and the World Bank have collaborated to develop technologies and delivery systems needed to extend water and sanitation services to low-income groups in developing countries. Through operations in more than 40 countries over the past ten years, this Interregional Programme has developed and refined five sets of tools for improving sector activities:

1. Analytical methods to review national sector policies, investment strategies, institutional frameworks, and manpower constraints

2. Affordable, simple water supply and sanitation technologies offering tremendous savings in capital and recurrent costs

3. Strategies for urban sanitation, solid waste management, and resource recovery that help urban institutions cope with expanding populations and growing environmental problems

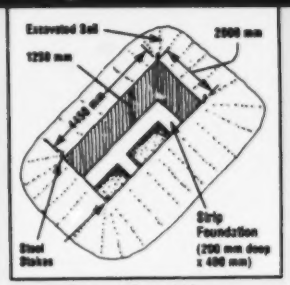
4. Organization of demonstration projects in low-income communities applying low-cost technologies and community-based approaches

Low-cost latrine, The Gambia.

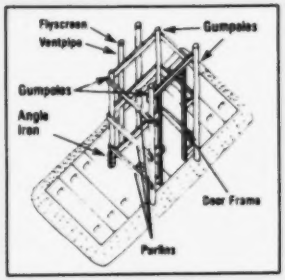
5. An International Training Network for Water and Waste Management delivering a broad range of training programmes for sector personnel.

Between now and 1990, the UNDP/World Bank Programme will be providing major assistance to expanding low-cost water supply and sanitation services in up to 40 developing countries. Implementation strategies and guidelines developed out of this experience will be more broadly applied to sector programmes in other countries in the 1990s.

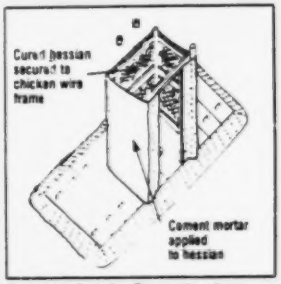
Basic instructions for constructing a low-cost latrine from a UNDP/World Bank Water and Sanitation Programme construction manual.



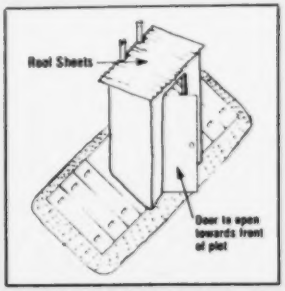
Excavation and Foundation



Framing the Superstructure



Constructing the Superstructure Walls



Completing the Superstructure

Toward the Year 2000

Despite the progress achieved during the Water and Sanitation Decade, the basic needs of hundreds of millions of people in the developing world remain unmet.

But the spirit of the Decade will live beyond the 1980s. Indeed, there is a renewed effort underway in the international community to accelerate expansion of water supply and sanitation services into the 1990s.

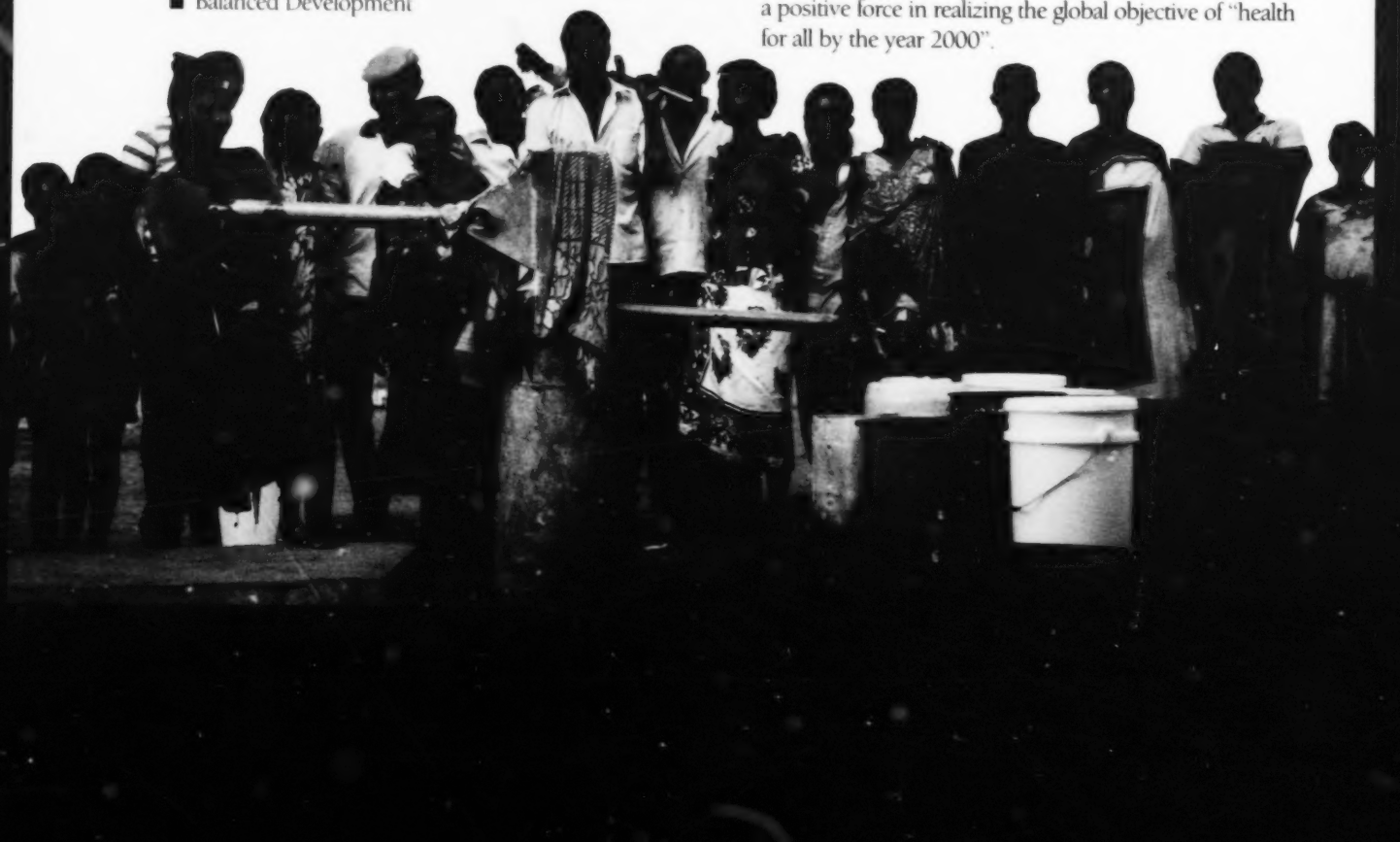
A global consultation on the Decade in late 1987 brought together representatives from the developing countries, major multilateral and bilateral aid agencies and NGOs. Out of this important consultation emerged a broad consensus to undertake water and sanitation plans and programmes following six "Global Sector Concepts" including:

- Institutional and Human Resources Development
- Cost Recovery
- Balanced Development
- Operation, Maintenance and Rehabilitation
- Community Participation and Hygiene Education
- Donor Co-ordination and Co-operation

The consultation also emerged with an "Action Agenda for Participating Agencies," which specifies actions to be taken by external support agencies to ensure that concepts and strategies proven essential to success are implemented in developing country programmes during the Decade and beyond.

The challenge of the 1990s will be the large-scale implementation of water and sanitation programmes to serve poor communities in the cities and rural areas of the developing world, using technologies and service systems that are affordable and sustainable.

Through continuing efforts to refine, promote and support the original Decade objectives established in the 1980s, the United Nations system of agencies is serving as a positive force in realizing the global objective of "health for all by the year 2000".



Selected Publications about the Decade

Decade Watch—a quarterly newsletter highlighting trends, new developments, country progress and special issues. Published by the Division of Information, UNDP, 1 UN Plaza, New York, NY 10017. USA

Review of Mid-Decade Progress—a global and regional review of progress during the first five years of the Decade. Published by the Division of Environmental Health, World Health Organization, 1211 Geneva 27, Switzerland.

Water and Human Health—a primer on water and health as influenced by the provision of safe, accessible water supplies. Available from the Development Information Center, Agency for International Development, Washington, D.C. 20523. USA.

Community Water Supply: The Handpump Option—an assessment of the available technology and management options for community water supply systems. Published by the World Bank, 1818 H. St. NW, Washington, D.C. 20433. USA.

List of Basic Publications on Community Water Supply and Sanitation—a selected bibliography and glossary of expressions. Available from the International Reference Center for Community Water Supply and Sanitation, P.O. Box 93190, 2509 AD The Hague, The Netherlands.

Audio Visual Materials

The Water of Ayole—shows how a small village in the West African nation of Togo is making its new water system work. Produced by Sandra Nichols Productions and available from UNDP/Information Division (address above) in English as a 28-minute VHS/NTSC video for US$15.

The Fiery Serpent—provides vivid lessons from rural Nigeria on the prevention and control of the dreaded Guinea worm disease, which afflicts 20 million people in Africa and South Asia. Produced by the US Centers for Disease Control and available in English as a 20 minute VHS/NTSC video from UNDP/Information Division for US$15.

Produced under the auspices of the Steering Committee for Co-operative Action, International Drinking Water Supply and Sanitation Decade (IDWSSD)

For further information, please contact:
Division of Information
United Nations Development Programme
1 UN Plaza, 19th Floor
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United Nations Development Programme
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